

# Notice of Allowability

Application No.

10/760,674

Examiner

Bernard Krasnic

Applicant(s)

NOSE ET AL.

Art Unit

2624

## -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 8-15-2007.
2. ☒ The allowed claim(s) is/are 1, 8, 15, and 22 renumbered as 1-4.
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☒ All    b) ☐ Some\*    c) ☐ None    of the:
    1. ☒ Certified copies of the priority documents have been received.
    2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
  5. ☐ CORRECTED DRAWINGS ( as "replacement sheets") must be submitted.
    - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review ( PTO-948) attached
      - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
    - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

### Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO/SB/08),  
Paper No./Mail Date 5-07-2007
4. ☐ Examiner's Comment Regarding Requirement for Deposit  
of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☒ Interview Summary (PTO-413),  
Paper No./Mail Date 20070919.
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other \_\_\_\_\_.

### **DETAILED ACTION**

1. This Office Action incorporates an Examiner's Amendment and Reasons For Allowance.

### ***Election/Restrictions***

2. Applicant's election with traverse of Species I [Claims 1-2, 5, 8-9, 12, 15-16, 19, 22-23, and 26] in the reply filed on 8/15/2007 is acknowledged. The traversal is on the ground(s) that the Examiner would not be unduly burdened if forced to examine Species II and III. This is not found persuasive because each different specific implementation of dividing the lattice is structurally different in design and operates by different modes, which would pose a great burden onto the Examiner. The requirement is still deemed proper and is therefore made FINAL.

### **EXAMINER'S AMENDMENT**

3. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it **MUST** be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Mr. Remus F. Fetea on September 19, 2007.

The application has been amended as follows:

For the Abstract on page 91 of the applicants application dated 01/24/2004:

1. Please delete the reference numbers -- 911 -- in line 1, -- (not shown) -- in line 5, -- 902 -- in line 6, -- 903 -- in line 11, and -- 902 -- in line 13.

For the claims on pages 78-90 of the applicants application dated 01/24/2004:

1. Please amend the claims as shown by the attached pages.

1 (Currently Amended): An image processing method realized by using comprising:

- an input step means for inputting an image;
- a signal processing step means for effecting signal processing on said image;
- a parameter deriving step means for deriving distortion correction data;
- a lattice dividing step means for dividing a picture the image with lattices;
- a parameter compressing step means for compressing data necessary for calculation by using lattice positions determined by said lattice dividing means step, positions at which said lattices are crossing each other and data obtained from said parameter deriving means step;
- a parameter holding step means for holding said compressed necessary data;
- a parameter decoding step means for expanding compressed data at every division and using said expanded data to correct distortion;
- a control step means for controlling said signal processing and parameter decoding operation steps; and
- an output step means for outputting or saving an image,

wherein said lattice dividing step divides equally a parameter with lattices in order to determine position at which data is compressed, said parameter compressing step holds an internally dividing point  $n-1$ , which results from dividing both ends of a lattice and its lattice segment by  $n$  by using the lattice position determined by said lattice dividing step, said lattice crossing position and data obtained from said parameter deriving step, as data necessary for calculation, and said parameter decoding step reproduces polynomial of degree  $n$  from a point  $n-1$  between both ends of division at every division and expands said compressed data for use in correcting distortion.

2-7 (Cancelled).

8 (Currently Amended): An image processing apparatus comprising:

- input means for inputting an image;
- signal processing means for effecting signal processing on said image;
- parameter deriving means for deriving distortion correction data;
- lattice dividing means for dividing ~~a picture~~ the image with lattices;
- parameter compressing means for compressing data necessary for calculation by using lattice positions determined by said lattice dividing means, positions at which said lattices are crossing each other and data obtained from said parameter deriving means;
- parameter holding means for holding said compressed necessary data;
- parameter decoding means for expanding compressed data at every division and using said expanded data to correct distortion;
- control means for controlling said signal processing and parameter decoding operation means; and
- output means for outputting or saving an image,

wherein said lattice dividing means divides equally a parameter with lattices in order to determine position at which data is compressed, said parameter compressing means holds an internally dividing point  $n-1$ , which results from dividing both ends of a lattice and its lattice segment by  $n$  by using the lattice position determined by said lattice dividing means, said lattice crossing position and data obtained from said parameter deriving means, as data necessary for calculation, and said parameter decoding means reproduces polynomial of degree  $n$  from a point  $n-1$  between both ends of division at every division and expands said compressed data for use in correcting distortion.

9-14 (Cancelled).

15 (Currently Amended): An image pickup apparatus suitable for the application of ~~an image processing method realized by using~~ comprising:

input means for inputting an image;

signal processing means for effecting signal processing on said image;

parameter deriving means for deriving distortion correction data;

lattice dividing means for dividing ~~a picture~~ the image with lattices;

parameter compressing means for compressing data necessary for calculation by using lattice positions determined by said lattice dividing means, positions at which said lattices are crossing each other and data obtained from said parameter deriving means;

parameter holding means for holding said compressed necessary data;

parameter decoding means for expanding compressed data at every division and using said expanded data to correct distortion;

control means for controlling said signal processing and parameter decoding operation means; and

output means for outputting or saving an image,

wherein said lattice dividing means divides equally a parameter with lattices in order to determine position at which data is compressed, said parameter compressing means holds an internally dividing point  $n-1$ , which results from dividing both ends of a lattice and its lattice segment by  $n$  by using the lattice position determined by said lattice dividing means, said lattice crossing position and data obtained from said parameter deriving means, as data necessary for calculation, and said parameter decoding means reproduces polynomial of degree  $n$  from a point  $n-1$  between both ends of division at every division and expands said compressed data for use in correcting distortion.

16-21 (Cancelled).

22 (Currently Amended): A display apparatus suitable for the application of an image processing method realized by using comprising:

input means for inputting an image;

signal processing means for effecting signal processing on said image;

parameter deriving means for deriving distortion correction data;

lattice dividing means for dividing a picture ~~the image~~ with lattices;

parameter compressing means for compressing data necessary for calculation by using lattice positions determined by said lattice dividing means, positions at which said lattices are crossing each other and data obtained from said parameter deriving means;

parameter holding means for holding said compressed necessary data;

parameter decoding means for expanding compressed data at every division and using said expanded data to correct distortion;

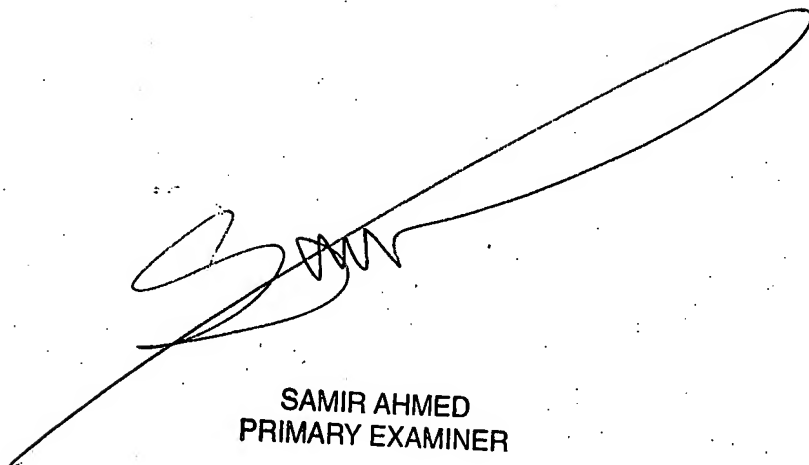
control means for controlling said signal processing and parameter decoding operation means; and

display means for displaying an image,

wherein said lattice dividing means divides equally a parameter with lattices in order to determine position at which data is compressed, said parameter compressing means holds an internally dividing point  $n-1$ , which results from dividing both ends of a lattice and its lattice segment by  $n$  by using the lattice position determined by said lattice dividing means, said lattice crossing position and data obtained from said parameter deriving means, as data necessary for calculation, and said parameter decoding means reproduces polynomial of degree  $n$  from a point  $n-1$  between both ends of division at every division and expands said

compressed data for use in correcting distortion.

23-28 (Cancelled).

A handwritten signature in black ink, consisting of a series of loops and a long, sweeping horizontal stroke that extends to the right.

SAMIR AHMED  
PRIMARY EXAMINER



### **REASONS FOR ALLOWANCE**

4. The following is an examiner's statement of reasons for allowance:

Independent claims 1, 8, 15, and 22 are allowable over the prior art of record.

Independent claims 1, 8, 15, and 22 respectively recite the limitation of: lattice dividing step/means divides equally a parameter with lattices in order to determine position at which data is compressed, said parameter compressing step/means holds an internally dividing point  $n-1$ , which results from dividing both ends of a lattice and its lattice segment by  $n$  by using the lattice position determined by said lattice dividing step/means, said lattice crossing position and data obtained from said parameter deriving step/means, as data necessary for calculation, and said parameter decoding step/means reproduces polynomial of degree  $n$  from a point  $n-1$  between both ends of division at every division and expands said compressed data for use in correcting.

The closest reference Horie (US 7,079,265 B2) discloses a distortion correction device for correcting imaged object to produce plane image without distortion.

However, Horie does not teach the limitations cited above.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

### **Conclusion**

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Bernard Krasnic whose telephone number is (571) 270-

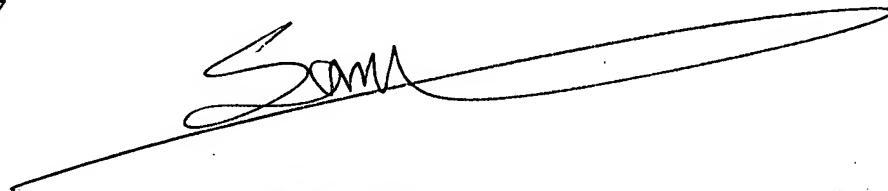
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1357. The examiner can normally be reached on Mon-Thur 8:00am-4:00pm and every other Friday 8:00am-3:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jingge Wu can be reached on (571) 272-7429. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Bernard Krasnic  
September 19, 2007

A handwritten signature in black ink, appearing to read 'SAMIR AHMED', is written over a horizontal line.

SAMIR AHMED  
PRIMARY EXAMINER